GEOTUBE SEPTAGE PILOT PROJECT 2005/2006
EGANVILLE SEWAGE TREATMENT PLANT

During 2005 the Eganville Sewage Treatment Plant (STP) processed 20,784 gallons of septage utilizing a Geotube MDS system. The filtrate was discharged to the STP for further treatment and the Geotube transferred to storage for further testing of the solids. Based on a limited number of samples the following tables provide a preliminary overview of the quality of the Raw Septage, Geotube Filtrate and Geotube Solids.

	RAW SEPTAGE	**GEOTUBE FILTRATE**	
Parameter (mg/L)	**Average**	**Average**	**% Reduction**
Aluminum	46.496	1.512	96.75%
Barium	1.166	0.172	85.25%
Beryllium	0.005	0.005	0.00%
Cadmium	0.024	0.02	16.67%
Cobalt	0.026	0.02	23.08%
Chromium	0.418	0.095	77.3%
Copper	3.088	0.092	97.02%
Iron	37.954	4.662	87.72%
Lead	0.16	0.04	75.00%
Magnesium	74.98	35.84	52.2%
Manganese	2.626	0.577	78.03%
Molybdenum	0.081	0.047	42%
Nickel	0.2138	0.1	53.2%
Silver	0.02	0.02	0.00%
Strontium	12.975	1.909	85.2%
Titanium	0.259	0.012	95.37%
Vanadium	0.018	0.005	72.22%
Zinc	5.677	0.236	95.84%
Calcium	2063	379.2	81.6%
BOD	**4482**	**671.2**	**85.02%**
Solids: suspended	**8672**	**158.04**	**98.18%**
Conductivity	2714	2506	7.66%
pH	6.84	7.41	
Alkalinity	942.2	838.6	11.00%
COD	**14228**	**4500**	**68.37%**
Nitrogen: nitrite	0.3776	0.0312	91.74%
Nittogen: nitrate+nitrite	0.128	0.062	51.56%
Nitrogen: ammonia+ammonium	156.2	132.6	15.11%
Phosphorus: phosphate	28.92	13.26	54.15%
Nitrogen: total Kjeldahl	**475**	**167.4**	**64.76%**
Phosphorus: total	**119.04**	**18.06**	**84.83%**
e-coli (c/1 g wet)	37000	22960	37.95%

GEOTUBE SEPTAGE SOLIDS

Metals*	**(mg/kg)**	**MOE Biosolid Limit**	**MOE Compost Limit**
Arsenic	1.3	170	13
Cadmium	0.5	34	3
Cobalt	1	340	34
Chromium	3.5	2800	50
Copper	143	1700	100
Lead	6.5	1100	150
Mercury	0.67	11	0.8
Molybdenum	2.4	94	2
Nickel	3.5	420	62
Selenium	7.5	34	2
Zinc	219	4200	500

***** Geotube Septage Solids easily meet the MOE Biosolids Limits for all metal parameters and only exceed the Compost Guidelines for Copper, Mercury, Molybdenum and Selenium.

Pathogens*	**(c/1 g wet)**	**MOE Biosolid Limit**
e-coli	95,000 -100	2,000,000

***** Pathogen levels were variable but decreased significantly with storage time in the Geotube and easily meet the MOE Biosolids Limit.

Nutrients*	**(mg/g dry)**
Nitrogen: total Kjeldahl	23
Phosphorus: total	12
Potassium	N/A

***** Nutrient levels are incorporated into the NMAN calculations to determine appropriate land application rates.

Misc.*	
Total Solids	20-30 %
pH	7

* % Solids increase with storage time and can be further enhanced by winter freeze thaw cycles.